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COMPUTER SCIENCE NEWSLETTER

No. 101

Edited by C. Alan Ford

Date June 29, 1973

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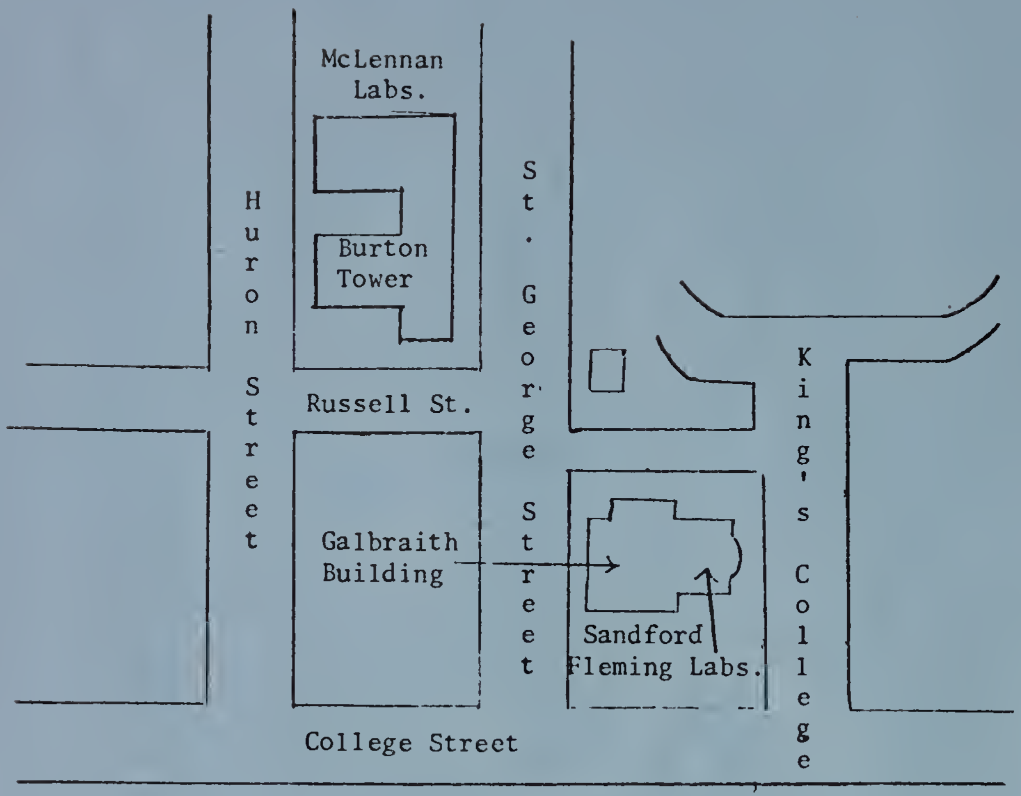
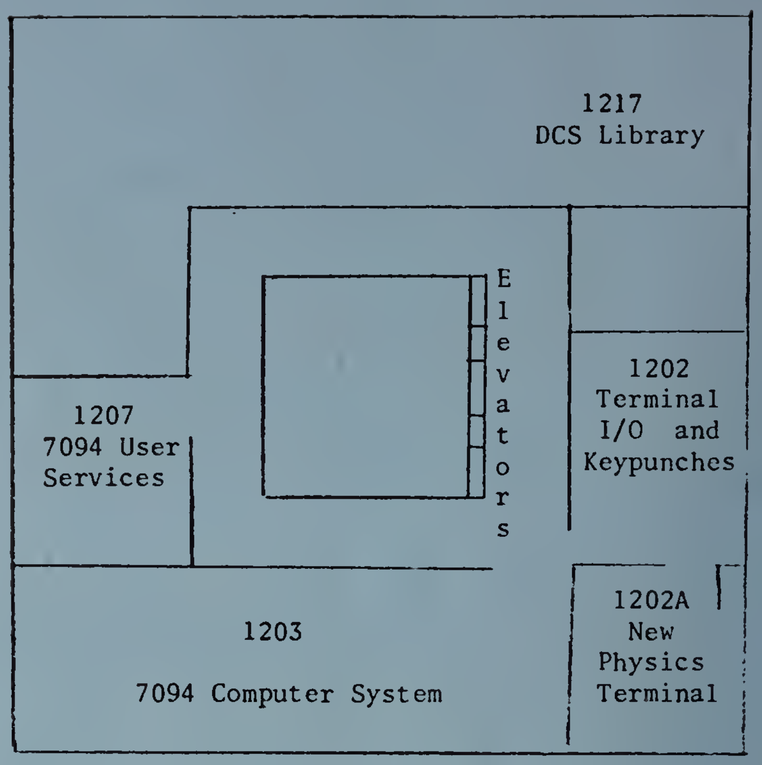
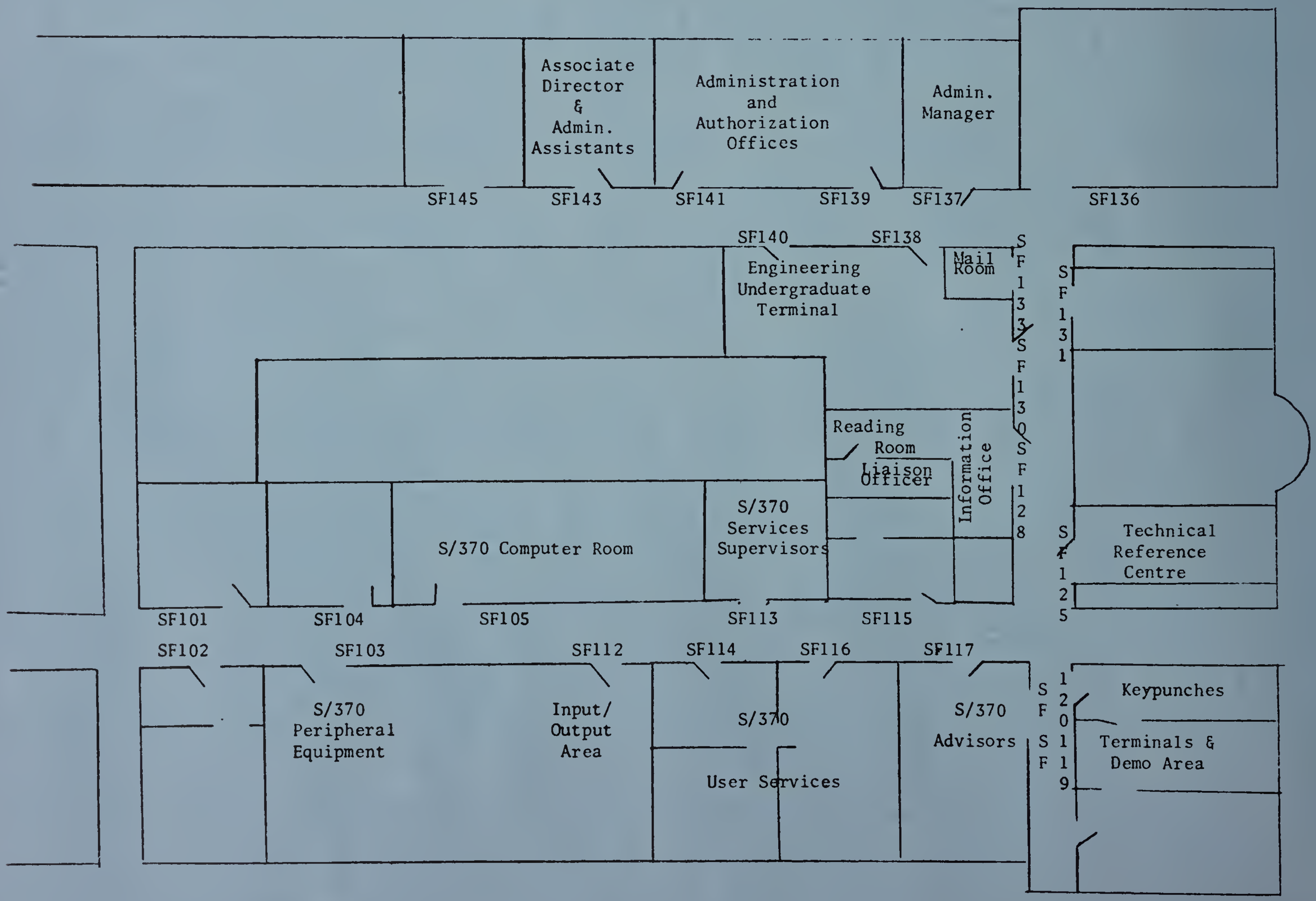




FLOOR PLAN: 12th Floor Burton Tower

FLOOR PLAN: UNIVERSITY OF TORONTO COMPUTER CENTRE

SANDFORD FLEMING LABORATORIES



C. A. FORD...OUTWARD BOUND

J. C. Wilson

I am sorry to announce the resignation of our Assistant Director, Mr. Ford, effective June 30, 1973. Al is going with Bell Canada to become Divisional Manager, Computer Operations, Western Region. No, he's not leaving the city: Bell's Western Region includes Toronto, apparently!

Al has been with the Centre since 1967 - longer than a great many of us - and in that time he has made many contributions to the operation and philosophy of our organization. His work as editor of the Newsletter is well known within U of T and has been mentioned by many people outside the University as well. In the fall of 1972 Al led the project to plan for and install the 370-165. It involved moving other machines and creating a brand new computer room, and it had to be done in under three months. The project was completed early! Al has also been responsible for the analysis and projection of production figures and has represented us on the committee responsible for setting prices on our services. He has also been our official Share representative.

We are truly sorry to see him go, although I'm sure that his position with Bell Canada will offer a great challenge.

A NEW EDITOR FOR THE NEWSLETTER

C. A. Ford

For many years now the Computer Science Newsletter has borne my name and the impact of my own sense of reportorial and editorial style. All this is to change, since I am departing the Computer Centre and the University at the end of June.

Bill Greene will take over the Newsletter starting at issue number 102. The office of Liaison Officer is an especially suitable location for this function. The Newsletter was always intended to be a centrepiece to the flow of information between Centre and users. Bill's perspective should help him to shape the Newsletter to meet this goal increasingly well.

More and more UTCC staff members have contributed their valuable efforts over these past years. I thank them, just as I thank Karen Roth, Barbara Watkins and a number of others for ATS typing and proof reading assistance. These very important people will remain with the publication, helping Bill to continue anything that has been good about it and to add new things to suit new inspirations.

Good luck and thanks to all, including those who made these pages both necessary and possible...the users of the UTCC computer services.

SHARE XLI, MIAMI BEACH, AUGUST 13-17

C. A. Ford

The summer session of Share Inc. will be held in Miami Beach, Florida, on the week of August 13 to 17. The Local Arrangements Committee has provided us with a brochure which seems to promise twenty-four hours of blazing sun. Actually, it doesn't blaze for the full twenty-four hours a day...it just seems that way. However, since SHARE goers are known to spend their time exclusively at the sessions and at SCIDs, the outdoor heat shouldn't deter people who are serious about their computer work.

The agenda will be made available for study for those interested as soon as it arrives. A copy will be placed with Miss Doherty in the Technical Reference Centre, SF143. Users of the UTCC services are reminded that they are qualified to attend these sessions. Sorry, but the UTCC budget does not permit us to offer to meet your expenses.

See you down south.

JOINT COMPUTER CENTRE PLANS AGAIN DISCUSSED BY COMPUTER USERS' COMMITTEE

C. A. Ford

The Computer Users' Committee met again on the 4th of June to consider further the subject of the joint Toronto-Ryerson-York Computer Centre. Possible advantages and disadvantages were reviewed and discussed at considerable length. The meeting led to the adoption of the following resolution:

> "It was moved and carried unanimously that the Committee's views with respect to a joint Toronto-York-Ryerson computer centre were in accordance with the following statements:
>
> > In the context of the current state of knowledge, the Computer Users' Committee can see no specific advantages and a number of disadvantages in a joint Toronto-York-Ryerson computer centre. In view of this fact, the Committee urges that no final decision be made until detailed proposals have been presented to and have been discussed by the Committee. Furthermore, the Computer Users' Committee recommends that users whom it designates be formally involved in any group which prepares detailed recommendations regarding the establishment of a joint computer centre."

CANADIAN INFORMATION PROCESSING SOCIETY AND CANADIAN STANDARDS ASSOCIATION ACTIVITIES

C. A. Ford

Your reporter has been for the past year a participant member of the CSA Committee on Information Processing and Office Machines, representing CIPS. This representation is generally on behalf of the users of computing equipment.

Some problems facing CSA/CIPOM and the industry we represent are so formidable as to bring either tears or laughter! What would you do about standards for paper forms and for optically recognizable characters, keeping in mind Canada's intention to go metric, the non-metricity of standard computer input and output devices, and the non-committment of the U.S. Senate to the Congressional Metric Bill?

Perhaps you could really help in the matter of character sets and coding. The CSA Committee on Character Sets and Coding is investigating the development of a standard on code extension techniques for use with the 7-bit coded character sets contained in Draft CSA Standard Z243.4, 7-bit Coded Character Set for Information Interchange. Those desiring to contribute to this development by reviewing the draft standard are invited to write to M. Z. Rogers, Canadian Standards Association, Standards Division, 178 Rexdale Boulevard, Rexdale, Ontario.

COMPUTER RESEARCH FACILITY TO MERGE

C. A. Ford

The Computer Research Facility, J. R. McBride, Manager, has been represented in these pages for very many issues past. However, CRF has been a distinct entity since its formation, in the late 1960's, as a spin-off of the forerunner of UTCC, the Institute of Computer Science.

Recent approvals given or anticipated by the Presidential Advisory Committee and the Policy Committees of CRF and UTCC will unite CRF as an operating wing within UTCC by September, 1973.

Information on the merger is to be found in the CRF section of this and earlier issues of the Newsletter.

PERSONNEL CHANGES

P. Kellett

We welcome two new members to the staff of the Computer Centre. Ralph Lombardi and Maggie Niemi have joined System/370 Services. Ralph has joined User Services and will be working out at Scarborough College. Maggie will be assisting John Lees as an accounting clerk.

Farewell and Good Luck to Andy Kowaliw, Arlene Steele and Susan Wenger. Andy has been seconded to the Council of Ontario Universities for much of the two and one half years he has been with the Computer Centre. He is going to Bell Northern Research in Ottawa. Arlene Steele has accepted a position with Ontario Hydro and Susan Wenger will be working for Honeywell Corporation.

(CORRECTION TO NEWLETTER 100: Ford Clancy is not with the Erindale administrative group as reported on page 2. He is instead CAL Coordinator, handling the PLATO IV terminal and APLCAT projects.)

RECENT ACQUISITIONS IN THE DCS LIBRARY

ACM-SIGFIDET Workshop, San Diego, Calif., November 1971.
Data descriptions, access and control, Ed. by E.F. Codd and A.L. Dean.
New York, ACM, 1971.

Association for Computing Machinery.
Graduate Assistantship Directory in the Computer Sciences, 1973-74.
New York, ACM, 1972.

Computerized Imaging Techniques Seminar, Washington, June 1967.
Proceedings.
Redondo Beach, Cal., Society of Photo-optical Instrumentation Engineers.

Design Automation Workshop.
Proceedings. 9th (1972).

Filmed Data and Computers Seminar, Boston, June 1966.
Proceedings.
Redondo Beach, Cal., Society of Photo-optical Instrumentation Engineers.

Orlando, Vincent Anthony.
Associative Processing in the Solution of Network Problems.
Syracuse, N.Y., University, 1972. (PhD thesis)

Weinberg, Gerald M.; Yasukawa, N. and Marcus, R.
Structured Programming in PL/C: an Abecedarian.
New York, Wiley, 1973.

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https://archive.org/details/computersciencen101cala

THE S/370-165 LOAD CHANGES

C. A. Ford

True to seasonal form the S/370 workload has slackened somewhat from the big March peak. The Overall Service Factor (Figure I) has dropped ten points from its rush season level while job volume (Figures II and IV) has dropped to two thirds of the March traffic. But look at the cpu time charged out to general purpose jobs (Figure V): it has dropped relatively little. Again this is true to form. Summer jobs are longer jobs.

The weeks ending April 22 and June 3 exemplify the change in the characteristics of the job stream. The table below shows several interesting indices for these two weeks.

Week Ending	cpu Minutes per job	Memory per job(KB-min)	Unit Records per job	Job Cost (nominal)
April 22	0.206	106.2	1252	$4.16
June 3	0.302	147.0	1581	$5.72

It is also interesting to note that the cpu time per job during the 9 a.m. to 9 p.m. periods of the June week was 0.241 minutes, well in excess of the figure for April (0.152) and for the April overall figure shown in the table.

The source reports for the foregoing data are copied as Figures VI (a) and (b).

Figure VII shows the volume of High Speed service which proceeded concurrently with the General Purpose work illustrated in Figures I through V. The HSJS load also is following its expected seasonal trend.

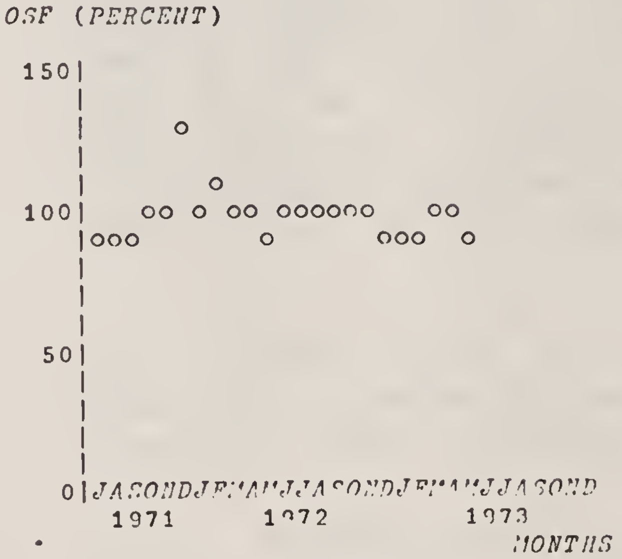

FIGURE I

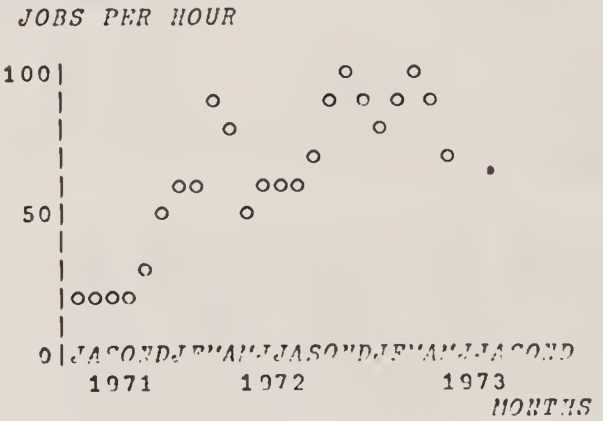

FIGURE II

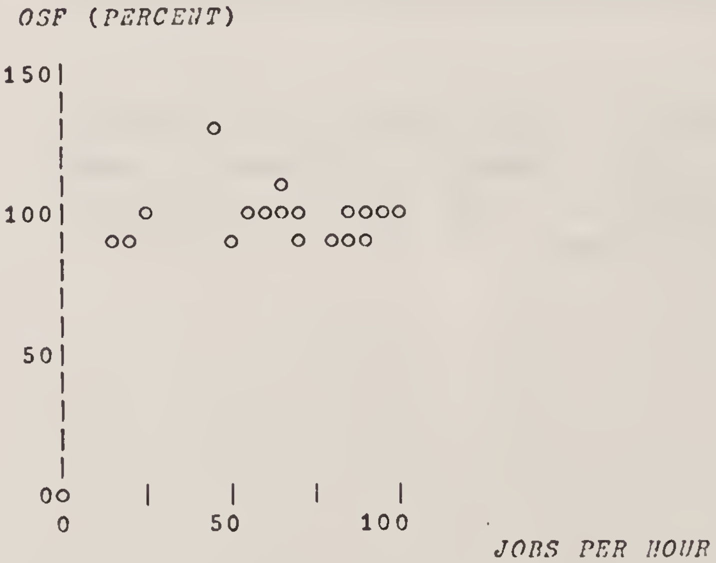

FIGURE III

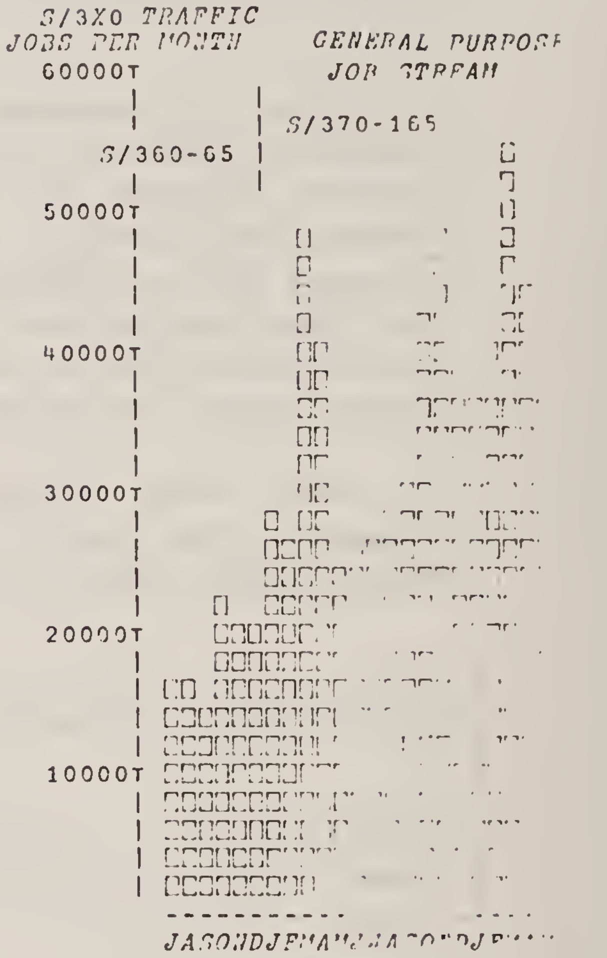

FIGURE IV

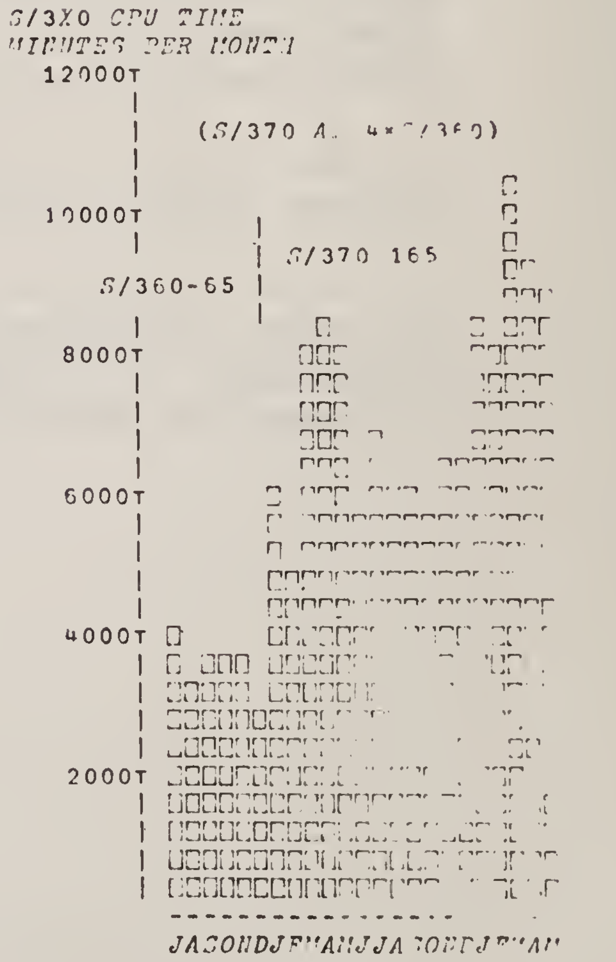

FIGURE V

```
      S/370-165  CALIBRATION  STUDY

              WEEKLY  REPORT

THE WEEK REPORTED BELOW ENDED ON SUNDAY JUN 03
THE HOURS SCHEDULED WERE:
PRIME SHIFT  60  NIGHT  32  WEEKEND  24
THERE WERE  11  UNSCHEDULED IPLS.

THE PRODUCTION FOR THE WEEK AND FOR THE AVERAGE WEEK TO DATE IS

GPJS  JOBS    CPU MIN   MEM KB MIN UNIT RCRDS  SETUPS  DOLLARS   HS BTCHS    EL MIN  UNIT RCRDS
      8099       2448    1193872  12826302      1865     46429     12006       941    6213682
     10681       2008    1049021  13212740      1787     41681     15614      1145    8626023

THERE WERE 0 SATURATED HOURS.

THE PER-HOUR PRODUCTION RATES, LOADED,PRIME,NIGHT,WEEKEND AND
OVERALL FOR THE WEEK WERE:

GPJS JOBS  CPU×100 MEM×10    U/R     SETUP  DOLLARS HSBTCHS EL×100    U/R
        0       0       0       0       0       0       0       0       0
      102    2460  110353  149513      21     477     159     843   77394
       32    1974  109142   68211      12     353      30     136   15076
       41    1418   76042   69696      11     272      86     382   45569
       70    2110  102920  110571      16     400     104     553   53618
```

FIGURE VI(A)

```
THE WEEK REPORTED BELOW ENDED ON SUNDAY APR 22
THE HOURS SCHEDULED WERE:
PRIME SHIFT  48  NIGHT  24  WEEKEND  24
THERE WERE  15  UNSCHEDULED IPLS.

THE PRODUCTION FOR THE WEEK AND FOR THE AVERAGE WEEK TO DATE IS

GPJS  JOBS    CPU MIN   MEM KB MIN UNIT RCRDS  SETUPS  DOLLARS   HS BTCHS    EL MIN  UNIT RCRDS
      8927       1841     946599  11152648      1697     37134     13397      1157    7971969
     11178       2013    1050126  13487209      1773     419962    16801      1286    9392405

THERE WERE 13 SATURATED HOURS.

THE PER-HOUR PRODUCTION RATES, LOADED,PRIME,NIGHT,WEEKEND AND
OVERALL FOR THE WEEK WERE:

GPJS JOBS  CPU×100 MEM×10    U/R     SETUP  DOLLARS HSBTCHS EL×100    U/R
      169    2570  104512  176889      22     506     260    2967  150901
      131    2388  111885  151370      24     480     201    1916  115559
       42    1152   95728   70566      13     273      51     392   33268
       67    1742   74918   91389      10     314     105     598   67781
       93    1917   98604  116173      18     387     140    1206   83041
```

FIGURE VI(B)

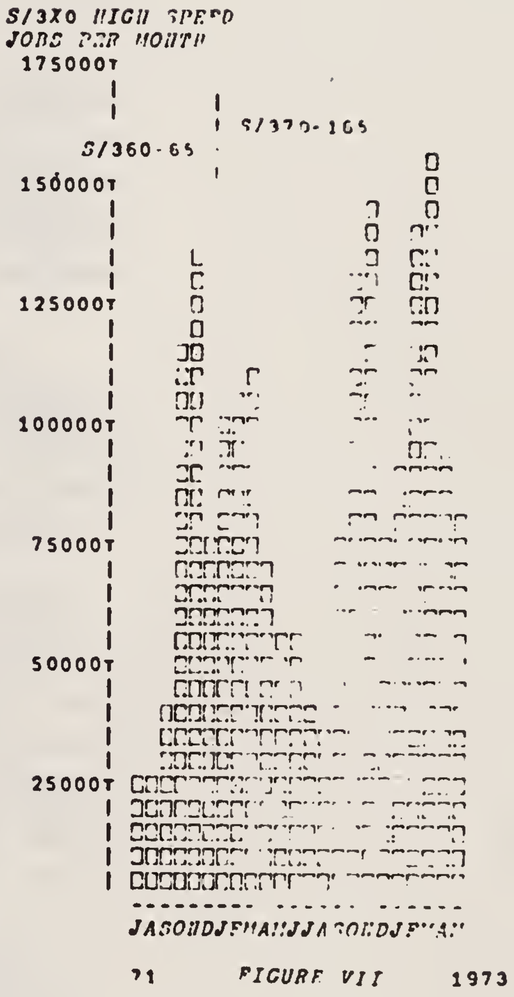

FIGURE VII

CRJE SERVICES

J. Wettlaufer

Most users are now aware that S/370 Services is investigating possible replacements for the Conversational Remote Job Entry system. CRJE was installed on the S/370-165, as an interim system only, in early 1972. It replaced the well-liked CPS-RJE function available on the S/360-65 until late 1971. A quest for something better than CRJE has been continuing since then.

We are now evaluating and testing TSO-RJE as a replacement. The attributes of TSO include: a high degree of CRJE compatability; extended functions; terminal profile commands; extensive online documentation; comprehensive editing capabilities. And it is a starting point for augmented forms of time sharing.

Users should be aware that the summer months provide the availability of system resources necessary to test and experiment with TSO and while still maintaining the CRJE service. A CRJE-vs-TSO decision, based on user reaction to the summer's testing, should be made by September 1.

We will keep all CRJE users fully informed of our plans and encourage them to participate in testing and evaluation of TSO. A series of open meetings will be held over the next few months to keep interested users up to date. Notices of these meetings can be found on notice boards, at the central site and at remotes. Current CRJE users are also informed by mail of the times and dates.

Any user wishing to have more information is encouraged to contact John Wettlaufer at 928-6355.

INFORMATION ON RELEASE 21.7

D. Brady

Why Was It Implemented?

Most of you are aware that OS release 21.7 has been in use on our S/370 system for a few weeks. We felt it a good idea to explain why we go to a new release of the operating system and what takes place, on our part, before UTCC feels it is ready to be put up on a production basis.

For reasons mentioned elsewhere in this issue, we will be trying out TSO (the time sharing option of OS). Release 21.7 provides better TSO support than 21.0 , with many bugs and performance deficiencies corrected.

Since Release 21 is now functionally stabilized , 21.7 provides maintenance (that is, bug fixes) and new hardware support only. Thus it should provide better long-term reliability than any earlier release. More than 1700 bugs in 21.6 (we were on 21.0) are fixed in 21.7. This well may be the last OS/MVT , so we can likely settle down here for as long as we run MVT.

Other reasons for going to 21.7 are hardware-related. 370 Services is acquiring a 3275 display terminal for use with the Arts and Science remote terminal, and this new device would not be fully supported on 21.0. New disk installations planned for this summer also required a fresh "SYSGEN".

And only the lastest versions will support the new high density (6250 bpi) 3420 tape drive, which UTCC has on order for early 1974.

Going 21.7 during the low activity summer period minimizes the possibility of disrupting production. Doing it now, carefully, is better by far than hurrying later to cope with the arrival of long-expected new equipment.

Was All of Release 21.7 Implemented?

No. Only the "control program" parts of release 21.7 are going in now, plus Utilities, Assembler, Linkage Editor and loader. There are few or no visible changes in these latter items.

The 21.7 language processors will probably be implemented at a later date (perhaps August).

What was the Implementation Procedure?

Release 21.7 was implemented Saturday, June 9 at 9 a.m. Fallback procedures were set up in such a way that no user jobs would be lost in the event that we chose to return for any reason to 21.0. The releases are sufficiently similar functionally that no problems should arise from switching back and forth. Catalogue updates, dataset updates, PROCLIB updates, etc. are all preserved across any switch in releases.

How Was it Tested?

All jobs in all of our test job streams were proven to run essentially identically as in 21.0. This included a check that job costs would not be affected.

Several problems were encountered in testing.

1. An I/O Wait Time Increase

   This arose from a change in OS code as supplied by IBM. It has been altered to UTCC standards, keeping I/O wait time charges essentially identical to the charges in 21.0.

2. Hasp Catastrophic Abend

   An error in a tape error recovery module caused the obliteration of printer control information. A correction was developed here and applied.

3. Initiator Abend

   This occurred when a job specifying MSGLEVEL=0 abended. A correction was developed here.

Users participated in one Sunday night's test. All system components were active. No problems were reported by users (other than those listed above).

What is Changed?

Here is a list of all known differences:

1. The Assembler (F) will now support the following new instructions.

   LRA
   PTLB
   RRB
   SCKC
   SPT
   STCKC
   STNSM
   STOSM
   STPT

   Note, however, that programs containing these instructions will not execute on our Model 165.

   These instructions are for virtual storage machines in the S/370 series.

2. IEBUPDTE will now print replaced and deleted lines as well as added lines.

3. IEBGENER will now copy default DCB parameters for use with SYSUT2 from SYSUT1 if these DCB parameters are not supplied from any other source.

What Should Users do in Case of Problems?

Call or see the program advisor in Room 117 Sandford Fleming.

S/370 RELIABILITY

R. Mikkor

The System/370 uptime for the month of May was 98.5% of scheduled production time. The average number of unscheduled IPL's per day during May was 1.2. These figures show an improvement over with the reliability figures for the first four months of 1973.

	% UPTIME	UNSCH IPL's/day
Jan 73	96.8	0.87
Feb 73	98.3	1.18
Mar 73	97.8	1.16
Apr 73	97.1	1.39
May 73	98.5	1.20

During May two major hardware and software system changes were implemented. Two megabytes of ITEL memory were installed on May 1st. During the month of May, 18 minutes of unscheduled corrective maintenance time was required to replace several logic boards in the memory. Error correction code logic could have continued to correct the single bit parity errors that were occurring but it was decided to replace the boards as a precautionary measure.

The major causes of system downtime in May were :

May 2 A shortcoming in CRJE design was aggravated by a high level of CRJE activity. This necessitated printing the OS job queue, costing 45 minutes of production time in May.

May 9 A tape drive hardware problem triggered an operating system loop on several occasions. The hardware problem was repaired later the same day by IBM hardware engineers.

May 18 Memory hardware precautionary maintenance.

May 25 EXECUTOR software bug (see article to follow).

May 29 A FORTRAN compiler design error caused the System Queue Space, the area in memory in which the operating system records the status of system resources and active jobs, to overflow. The problem was identified and passed to IBM for correction.

Other hardware and software problems during May have been identified and either have been fixed or are awaiting appropriate fixes from IBM. System Reliability will further be enhanced by the installation of the latest maintenance release of the Operating Systems Software described in another article in this newsletter.

```
                                DOWNTIME REPORT ON S370 FOR MAY '73

                                               RLDS (FREQ) // DWNTME (MIN)
DAY  RELOADS  DOWNTIME    0    5   10   15   20   25   30   35   40   45   50   55   60   65   70   75   80   85   90   95  100
========================= +----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+
  1     1         5       |⊠****
  2     3        30       |⊠⊠⊠***************************
  3     1         6       |⊠*****
  4     0         0       |
  5     0         0       |
  6     0         0       |
  7     2        18       |⊠⊠****************
  8     3        19       |⊠⊠⊠****************
  9     3        35       |⊠⊠⊠********************************
 10     1        10       |⊠*********
 11     0         0       |
 12     0         0       |
 13     2        10       |⊠⊠********
 14     0         0       |
 15     0         0       |
 16     2        17       |⊠⊠***************
 17     2        19       |⊠⊠*****************
 18     1        20       |⊠*******************
 19     1         5       |⊠****
 20     0         0       |
 21    ( CENTER CLOSED )  |
 22     1        10       |⊠*********
 23     1         1       |⊠
 24     1         5       |⊠****
 25     6        45       |⊠⊠⊠⊠⊠⊠***************************************
 26     0         0       |
 27     0         0       |
 28     2        15       |⊠⊠*************
 29     2        20       |⊠⊠******************
 30     1         8       |⊠*******
 31     0         0       |

LEGEND :

  ONE QUAD ('□') = ONE RELOAD
  ONE ASTERISK ('*') = ONE MIN. OF DOWNTIME

        STATISTICS :

                         TOTAL SCHEDULED HOURS OF PRODUCTION    344

                         TOTAL DOWNTIME (MIN) ...    298, AVG/DAY ...    9.93
                         TOTAL RELOADS .........      36, AVG/DAY ...    1.20

                         DOWNTIME RATE IS    1.48 PERCENT OF SCHEDULED PRODUCTION HOURS
```

EXECUTOR IN SERVICE

R. Mikkor

EXECUTOR, a software package from the University of West Virginia that performs system resource allocation more efficiently than OS initiators for 75% of our class A job stream, was installed on May 22. Although forty minutes of downtime for May 25 was attributed to EXECUTOR, the cause of the problem was quickly detected and fixed. EXECUTOR has been totally reliable since then.

The results of the anticipated improvement in system resource utilization will not become fully apparent until the Class A workload builds up again after the present convocation time slump. TORMON hardware performance measurements do show that less cpu time is used up in supervisor state. Other vital resources are also less loaded, therefore more power is available for users' jobs.

UTILITY PROGRAMS

H. Kugel

UTCC users may not be aware of the full range of user utility programs now supported and available.

Most widely known are the standard IBM utilities which are described in USERBOOK 3.4 and in the IBM utilities manual GC28-6586. The most useful of these for the application programmer are:

IEBCOPY:	to copy and compress partitioned datasets.
IEHMOVE:	to copy sequential and/or partitioned datasets and to backup and restore partitioned direct access datasets onto tape.
IEBGENER:	performs an entire series of card/tape, tape to disk, and related operations.
IEBPTPCH:	to print (or punch) a sequential dataset or members of a partitioned dataset.
IEBUPDTE:	to create and modify individual members of card-image partitioned datasets.
IEHLIST:	to list dataset and disk information.

UTCC also has a large complement of user utilities which is being augmented steadily. We overlap IBM's utilities when we feel that we can get an easier-to-use utility, a faster utility, or a utility for a specific need that does not exist within the IBM software packages. These are documented only in USERBOOK 3.4 and are listed here in groups according to function.

For copying partitioned and sequential datasets (card-to-tape, card-to-disk, etc.) UTCC has the utilities UTDSUTIL, SELECT and PDSTOSDS. To print and/or punch sequential datasets, the UTCC utilities UTDSUTIL, SELECT, RETRIEVE and APDSLIST may be used.

To provide information about datasets on disk, DSMAP may be used. To obtain information about all the datasets on a given disk, MAPDISK is used.

Many users have problems with nonstandard tapes. We maintain TCOPY, TCOPY7, TAPEXRAY and TAPERT to help a user find out all he needs to know about a tape's characteristics.

We have, in addition, created the utilities ADDPROC, EXTEND and DELPROC to allow users access to and control of SYS3.PROCLIB, the user procedure library.

We also have a series of utilities to allow a user to handle online datasets -- ALLOC, SCRATCH, VOLUME and CONVERT. ALLOC will reserve space for a dataset. SCRATCH will free this space when it is no longer needed. CONVERT will 'charge' a disk dataset to an authorization code so it can be kept on the disk. VOLUME will locate a catalogued dataset.

We are currently preparing still other utilities which will soon be documented in USERBOOK. To be included are:

OVERLAY	which analyzes a load module's overlay structure.
RLSEPDS	which allows a user to release any unused space in his online datasets.

All those utilities are currently in or will soon be in USERBOOK 3.4. If you have any questions please call Herb Kugel at 928-7286 or Ian Darwin at 928-7318.

WEEKDAY

H. Kugel

Would you like to know the day of the week your maternal grandmother was born?

Some time ago, UTCC received a request from a user for help in an application which required the ability to determine the specific day of the week a particular year, month and day fell on, i.e. Sunday, Monday, etc. This type of information could be useful in accident studies...how many more accidents happen on Friday as opposed to Monday? what difference does a holiday in the middle of the week make to an accident rate as opposed to a 'long weekend' holiday...

At any rate, after much searching, we finally found a subroutine listed in the SHARE program catalogue which could be used in this application. We have now modified the routine so that it can also be used as a standalone program.

Briefly, the program now available deals with the Gregorian Calendar, our basic calendar, and is accurate between October 15, 1582 AD and February 28, 4000 AD. The Gregorian Calendar was nowhere used before October 15, 1582 AD and the definition of this calendar is uncertain after February 28, 4000.

To use the program merely write:

```
//  EXEC WEEKDAY
//FT05F001 DD *
    Data statements, one per each date
/*
```

The data statements for this program must be of the form:

- Columns 1 to 8 contain the year, month and day respectively. Thus, December 7, 1941 would be:

```
19411207
```

while June 6, 1944 would be:

```
19440606
```

- Columns 11 through 30 of the data card may be used for the date or optional comments to be printed out by the program, such as PEARL HARBOR or D DAY.

The program returns as output a numerical value 0 to 6 inclusive where 0 stands for Sunday, 1 for Monday and so on up to 6 for Saturday.

If you are interested in this program or curious about its mathematical algorithm, please call Herb Kugel at 928-7286.

PEOPLE IN THE COMPUTER CENTRE

S. Yagi

John Wettlaufer is a consultant with the User Services Group in S/370 Services.

John received his B.Sc. in Computer Science from the University of Western Ontario. Previously he attended McMaster University. He has worked on a variety of machines including the CDC 6400, PDP-10, and S/370-165.

At UTCC John has been involved in Fortran compiler support, CRJE support and has acted as the Remote Terminal co-ordinator. He now is working the TSO-RJE project (see elsewhere in this issue).

HOURS OF SERVICE -- DOMINION DAY

J. Campbell

The following hours of service will be in effect for System /370 Services users during the Dominion Day Weekend:

	June 30 (Saturday)	July 1 (Sunday)	July 2 (Monday)
I/O Services (SF112)	9am-5pm	9am-5pm	closed
EUT	9am-5pm	9am-5pm	closed
ASUT	10am-5pm	10am-5pm	closed
AST	10am-5pm	10am-5pm	closed

Normal hours of service will resume on Tuesday, July 3.

TIDY

H. Kugel

We have received, through the kind assistance of Mr. Randolph Franklin of the Department of Computer Science, the latest version of the TIDY program from the University of Ottawa. This program is a Fortran Source Statement Preprocessor, written in Fortran, and is used to 'clean up' Fortran source programs whose statement numbering has become quite complex and whose readability has thus deteriorated. The program can be used prior to documentation or publishing making a Fortran program much easier to read.

TIDY operates as a preprocessor. UTCC therefore is giving it a thorough workout. Users who have tried it have reported very favourable results .

We are thoroughly testing the package to determine its constraints before making it official and incorporating documentation for it into USERBOOK. What we don't want are working programs 'cleaned up' but then not working. Meanwhile, if you are interested in seeing what this program can do for you, please call Herb Kugel at 928-7286.

UPDATES ISSUED FOR USERBOOK SECTION 3

J. Campbell

Pages added, and/or replaced by updates:

Date of Update: 2Apr73

**Remove all pages in USERBOOK 3.8 dated prior to April 1, 1973.

3.8*
3.8-2*
3.8010*
2.8112*
3.8112-2*
3.8112-3*
3.8115*
3.8115-2*
3.8120*
3.8125*
3.8130*
3.8132*
3.8134*
3.8136-2*
3.8136-3*
3.8136-4*
3.8136-5*
3.8136-6*
3.8136-7*
3.8136-8*
3.8140*
3.8150*
3.8150-2*
3.8152*
3.8152-2*
3.8152-3*
3.8154*
3.8154-2*
3.8154-3*
3.8156*
3.8158-2*
3.8158-3*
3.8166*
3.8167*
3.8169*
3.8169-2*
3.8169-3*
3.8172*
3.8172-2*
3.8172-3*
3.8180*
3.8180-2*
3.8180-3*
3.8185*
3.8185-2*
3.8185-3*
3.8185-4*
3.8188*
3.8190*
3.8190-2*
3.8800*
3.8800-2*
3.8830*
3.883]*
3.8831-2*
3.8831-3
3.8832*
3.8832-2*
3.8832-3*
3.8833*

Date of Update: 8May73

3.8834*
3.8836*
3.8838*
3.8839*
3.8839-2*
3.8840*
3.8840-2*
3.8841*
3.8843*
3.8845-2*
3.8846*
3.8847*
3.8849*
3.8849-2*
3.8849-3*
3.9903-18*

Date of Update: 28May73

3.8*
3.8200
3.8202-2*
3.8204*
3.8204-2*
3.8204-3*
3.8204-4*
3.8204-5*
3.8204-6*
3.8204-7*
3.8205*
3.8205-2*

Date of Update: 30May73

**Remove all pages in USERBOOK 3.7 dated prior to May 30, 1973.

3.7*
3.7000*
3.7100*
3.7110*
3.7110-2*
3.7110-3*
3.7110-4*
3.7110-5*
3.7120*
3.7130*
3.7130-2*
3.7140*
3.7140-2*
3.7150*
3.7150-2*
3.7160*
3.7199*
3.7199-2*
3.7200*
3.7200-2*
3.7210*
3.7220*
3.7230*
3.7240*
3.7240-2*
3.7250*
3.7270*
3.7295*
3.7298-2*
3.7299*
3.7299-2*
3.7500*
3.7900*

3.7160-2*
3.7199-3*

3.9903-19*

Summary of Changes

**IMPORTANT NOTE:

The new pages for Chapter 3.8 dated 2Apr73 and 8May73 replace all previous pages in Chapter 3.8.

This update provides detailed information on the use of CalComp and CRJE at UTCC.

USERBOOK 3.8200 contains detailed information on CalComp Plot Simulation with WATFIV on the High Speed printer.

Chapter 3.7 has been completely revised and contains directions for obtaining current copies of an Alphabetic Program Description Index and KWIC Index of the Optimization and Numerical Methods Program Library.

**IMPORTANT NOTE:

Remove all pages in Chapter 3.7 dated prior to May 30, 1973. This update is a complete replacement.

INTERACTIVE SYSTEMS RELIABILITY

S. Goldfarb

The uptimes achieved in May for each of APL, ATS, and CPS were 99.70%, 98.80% and 99.61%, respectively. The total number of scheduled hours of operation during the period May 1 through May 31 was 493. In addition to the scheduled hours of operation, APL, ATS and CPS were available during approximately 130 hours of unattended weekend operation.

The following table summarizes the time lost out of scheduled hours of production. There were two late starts due to hardware errors resulting in total delays of 13, 19 and 22 minutes for APL, ATS and CPS, respectively; there was one late start for ATS of 7 hours 45 minutes on May 7 due to ATS software difficulties. The table shows the time lost due to system failures for each of the systems: seven unscheduled IPL's were required as a result of the failures.

DATE	DOWNTIME (mins)			REASON
	APL	ATS	CPS	
Mon. May 7	24 6	- -	26 8	**Attempting to correct ATS Software Problems (software)
Wed. May 23	8	10	11	*Channel Errors (hardware)
Mon. May 28	16	12	13	*Undetermined
Tue. May 29	12 5 6	14 7 9	16 9 10	*** ATS Software Problems (software)
Total	77	52	93	*IPL Required

System Failures May 1 to May 30, 1973

BROWNBOX MANUAL

S. Goldfarb

User documentation for the Brownbox data management system (described in Newsletter No. 90, March 1973) is now complete. The documentation describes the functions available in the Brownbox system and provides examples for defining and redefining an information retrieval application using the Brownbox functions. A copy of the "Brownbox Manual" may be purchased from the Interactive Systems Group (928-3787) for $2.00.

APL V CONFERENCE PROCEEDINGS

S. Goldfarb

The fifth annual APL user's conference held in Toronto was, by all accounts, a very sucessful meeting. Copies of the Conference Proceedings are still available (at $6.00 each) from:

Mr. Brian Hockey
I.P. Sharp Associates Limited
P.O. Box 71
Toronto-Dominion Centre
Toronto, Ontario

APL SHARED VARIABLES

S. Goldfarb

IBM took advantage of the gathering of APL users at APL V to announce the APL Shared Variable (APLSV) system. APLSV is a Programming RPQ designed to run under OS VS-1 or OS VS-2; it provides enhancements to the APL\360 language and access to Operating System files via a "shared variable" facility. The new features include:

(a) a shared variable communication facility which provides an interface between concurrently operating processors through the sharing of one or more variables. For example, variables can be shared between two active APL workspaces so that information may be passed between the two workspaces to be used by each workspace for its own purposes. Also, variables can be shared between an APL workspace and some auxiliary processor affording a means for accessing Operating System files or peripheral devices.

(b) new primitive APL functions execute and format which provide execution of a character string argument which is an APL expression and conversion between character and numeric arrays.

(c) dynamically executable system functions.

(d) a mechanism for obtaining the canonical representation of a function definition as a character matrix (i.e. each row of the character matrix represents a line of the function without line numbers). In addition, system functions are provided for conversion between such a representation and a defined function. It would, therefore, be possible to store functions as data and to generate new functions under program control.

Additional information on APLSV may be found in the following IBM publications:

(1) Programming RPQ # WE1191
APL Shared Variables (APLSV)
Design Objectives

(2) "System Formulation and Shared Variables"
R. H. Lathwell

to appear in IBM Journal of Research and Development
Vol. 17, No. 4, July 1973

(3) "Communications in APL Systems"
A. D. Falkoff and K. E. Iverson
Philadelphia Scientific Centre
Tech. Report No. 320-3022, May 1973

GENERAL NEWS

K. C. Patnaik

CRF Users' Meeting

The monthly Users' Meeting was held in the Sandford Fleming Laboratories, Room 222, at 3:00 p.m. on Friday, May 25, 1973.

Discussion at the meeting centered around the S/360-44 core installation and a FREE DAY for users to test O/S Release 21.6.

The next CRF Users' Meeting was to be held in Room 222, Sandford Fleming Laboratories at 3:00 p.m. on Friday, June 22, 1973. All CRF users were invited to attend.

The CRF/UTCC Merger

As mentioned in the last bulletin, the CRF/UTCC merger was unanimously approved by the Presidential Advisory Committee in principle and was awaiting approval by the CRF and UTCC Policy Committees.

On June 7, 1973 the CRF Policy Committee gave final approval to the UTCC/CRF merger agreement. This agreement will be presented to the UTCC Policy Committee for its approval. The date for the official merger is set for September 1973.

Visitors to the CRF Laboratory

The following is a partial list of visitors to the CRF laboratory between May 10, 1973 and June 10, 1973. A detailed list of all visitors to CRF is maintained in the CRF laboratory.

Professor J. Dolerogowski (Technical University of Torusin, Poland), Captain Wirtanen (United States Air Force, Sacramento, California) and Dr. M.A. Laughton (Department of Electrical and Electronics Engineering, Queen Mary College, London, United Kingdom).

Dominion Day Holiday

The CRF laboratory and offices will be closed on Monday, July 2, 1973 for the Dominion Day holiday.

The CRF laboratory will close at 8:00 p.m. on Friday, June 29, 1973 and will reopen at 9:00 a.m. on Tuesday, July 3, 1973.

EXPANSION OF S/360-44 CORE MEMORY

The expansion of S/360-44 core memory is almost finished and is expected to be available to users by the end of June 1973.

O/S RELEASE 21.6

During the past month CRF has SYSGENED Release 21.6. The system will be implemented as soon as the expansion of S/360-44 core memory is implemented.

In order to test the new system CRF will be having a FREE DAY during which users may run their jobs on the S/360-44 without charge. A special memo will be issued prior to the implementation date.

NEW DOCUMENTATION AVAILABLE

User Documentation Library

A users documentation library exactly like LDOC (CRF's documentation library on disk) now exists for user documents and is called LDOCU.

User format documents can be stored in and retrieved from the user documentation library by using the following JCL.

To Store

```
//  Job card
//  EXEC CDOCU,NAME=name
//FMT.SYSIN DD *
         Format Source Deck
/*
```

where:

Name - is the document name to a maximum of eight characters.

To Retrieve

```
// Job card
// EXEC LDOCU,NAME='Z'
```

where:

Z - can be an * to list only the names of all the members in the documentation library

or

Z - is one or more names of documents in the library to be listed.

Examples

NAME='MYTHESIS' (this will give you one copy of the document MYTHESIS)

NAME='MYTHESIS(X)' (where X specifies the number of copies of the document MYTHESIS)

For further information on the user documentation library, please contact Ken Weir, Room 214, Sandford Fleming Laboratories or telephone local 5271.

UTCC DIRECTORY

	ROOM	PHONE 928-
DIRECTOR		
John C. Wilson	49 St.Geo	6496
ASSISTANT DIRECTOR		
C. Alan Ford	49 St.Geo	2991
USER LIAISON OFFICER		
Bill Greene	SF 128A	2694
Information Office	SF128	4990 or 4991
ADMINISTRATION MANAGER		
Jerry Palter	SF137	8948
AUTHORIZATION CLERKS		
Nancy Pocock (S/370 + 7094)	SF139	8702
Yvonne Davis (Interactive)	49 St.Geo	8703
S/370 SERVICES		
MANAGER		
Dave McNaughton	SF143	6281
INPUT/OUTPUT SUPERVISOR		
Derry Cox	SF113	7092
USER SERVICES SUPERVISOR		
Stan Yagi	SF113	7331
SYSTEMS SUPPORT SUPERVISOR		
Rein Mikkor	SF113	5058
PROGRAM ADVISORS	SF117	8599
INTERACTIVE TERMINAL SYSTEMS		
MANAGER		
Sam Goldfarb	49 St.Geo	3787
7094 SERVICES		
MANAGER		
Joyce Walton	BT1207	7094

JOB STATUS QUERIES:

SYSTEM/370	7373
7094	7094

INTERACTIVE TERMINAL SYSTEMS:

System Status	6234
APL	7200
ATS	7100
CPS	6200

CONVERSATIONAL REMOTE JOB ENTRY (CRJE)

2741: Tel:	7223	7381	7386
TTY:			7445

UTCC COMPUTER EQUIPMENT

(a) SYSTEM/370 MODEL 165

- located in SF 106/110/111
- provides General Purpose Job Stream, High Speed Job Stream and Conversational Remote Job Entry services
- 2048K bytes of memory
- 1 drum
- 6 disk drives IBM (3330)
- 8 disk drives IBM (2314)
- 6 magnetic tape drives (6 9-track and 2 7-track)
- 6 display consoles
- 6 printers
- 5 card readers
- 1 card punch
- 7 remote batch terminals
- 1 paper tape reader
- CALCOMP plotter (11" and 30")

- OS/MVT with HASP

(b) SYSTEM/360 MODEL 65

- located in Room 333 McLennan Physical Laboratories
- provides Interactive Systems Service
- 1536K bytes of core
- 16 disk drives (2314)
- 2 9-track magnetic tape drives
- 1 printer
- 1 card reader
- 1 card punch
- 120 typewriter terminals

- OS/MVT with APL, ATS, and CPS

(c) 7094 II

- located in Room 1203 Burton Tower
- 32K words of core
- 1 disk
- 8 magnetic tape drives
- input/output via a 1401 computer

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SERIALS DEPT.,
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